Space Weather Forecast

Issued on Thursday, 02 June 2022 at 01:18 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Slight chance of R1/R2 Radio Blackouts.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Very Low, with no significant activity. There are four regions on the Earth-facing disc. The most notable is a region that has rapidly grown in the last 12 hours, and was the source of a recent background class flare, although this region currently remains relatively small and magnetically simple. The other regions are smaller, simple and mostly stable, although a new region has developed in the southeast, which has continued to show growth. Meanwhile, a central disc filament eruption was observed to have an associated coronal dimming, with a weak and slow coronal mass ejection (CME) seen in available coronal imagery. This has been analysed and may give a slight chance of a glancing blow late on day 4 (5th June). No other Earth-directed CMEs have been observed in the last 24 hours.

Solar Wind / Geomagnetic Activity: The solar wind has declined from elevated to near background levels, due to a waning fast wind. The total magnetic field carried by the solar wind has been weak, with the important north-south component also varying weakly. Geomagnetic activity was Quiet.

Energetic Particles / Solar Radiation: The count rate of solar energetic particles (high energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be Low or Very Low, with a slight, but decreasing chance of Moderate activity from a sunspot close to the western limb.

Solar Wind / Geomagnetic Activity: There is the slight chance of a fairly weak and slow Earth-directed CME from a filament eruption arriving late on day4 (5th June), although confidence is low. Otherwise, solar winds are expected to remain at background levels throughout the period. Geomagnetic activity is forecast to be mostly Quiet, but with a slight chance of an Unsettled or Active interval from a weak CME, which may give a glancing blow late on day 4 (5th June).

Energetic Particles / Solar Radiation: The count rate of solar energetic particles (high energy protons) is forecast to remain at background with no solar radiation storms occurring.

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Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	1	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	15	15	10	10
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	2	2	2	2
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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